The Impact of Emerging Technologies on Information Policy in Libraries

Mary Alice Ball
Indiana University School of Library and Information Science
Indianapolis, Indiana,
United States of America

Meeting:	130 *SI* - Division III
Simultaneous Interpretation:	Yes

Abstract

During the 2006 spring semester students at the Indiana University School of Library and Information Science in Indianapolis experimented with the creation and use of content in varied formats in order to better understand the impact of emerging technologies on information. The seminar in information policy was redesigned as an experimental online laboratory so that students could investigate the tensions between content technologies and public policy.

Librarians are challenged to experiment with new roles and new services as we struggle to keep up with the latest technological developments. In a world where content creators can communicate directly with consumers, librarians need to innovate in order to meet the changing needs and expectations of our patrons. Educators confront these issues as we train a new generation of information professionals who are technologically savvy but also grounded in the values of librarianship. Library school faculty seek to nurture both the broader perspective that will be sensitive to the societal and global implications of emerging technologies and the professional commitment to protect the public's right to information.

This paper describes a seminar in information policy that was set up as an experimental information "laboratory" with students and professor acting both as participants and observers in an attempt to better understand the tensions between

technological evolution and public policy. It discusses the issues and challenges of creating, using and disseminating content in varied formats, and ends with students' and instructor's insights into the experience. The paper is based on a class in the United States but perhaps can be instructive to professionals in other countries. I'd like to begin by describing the motivation for the course, as well as background information on the environment, students, and readings.

The class examined policy issues from the varied perspectives of content creators and consumers, and the librarian and publisher disseminators of information. I have been teaching faculty for two years now, but have had prior experience working in libraries, the software industry, and publishing. I wanted to simulate the real-life conditions of instability, uncertainty, and lack of control that are part of a technologically diverse and dynamic environment. One of my goals was to move students away from partisan attitudes often exhibited by librarians to a more nuanced, analytical view that could appreciate the various stakeholders' positions regarding information policy. I hoped that by immersing students in an information intense environment they would come to appreciate the interconnectedness of technology and policy to a degree that would not be possible with a more detached, theoretical approach. The process of the seminar was just as important as the final outcomes. My approach assumes that students taking an information policy seminar have some interest in the topic and will be responsible for contributing to the outcome. Although the class began as a teaching experiment, I am beginning to develop a qualitative research case study from the experience and that of a subsequent summer seminar in information policy. What I present today are very preliminary findings.

Anticipated success factors were greater student empowerment and ownership of the coursework than is typical in most classes. This necessitated a relatively unstructured format, one that relied on teams to alleviate some of the fears associated with experimentation. Students were asked to self-select onto a technology or a policy team where they would make decisions about class direction jointly.

The ten students in the seminar were a mixed group of technologically sophisticated and less advanced individuals representing different skill sets and experience. Library school students on the Indianapolis IUPUI campus tend to be older with work experience and family responsibilities in contrast to the more recent college graduate population of the Bloomington program. Like many library school programs, females predominate. All of these characteristics held true for my seminar students. Three worked in information systems, one at a large research university, one in the statewide library network, and another at a cultural organization. Three worked in academic libraries, two in public libraries, and one in a law library. Two were transitioning from long-term careers, one as a high school English teacher and the other as a manager of university career services.

Students selected on to teams for various reasons and with differing levels of confidence. The technology team consisted of the three systems professionals, a public library audiovisual librarian, and the former higher school teacher. The policy

team was made up of a lawyer, two academic library managers, a public library grant writer, and the career services manager.

With the library school administration's encouragement of faculty development of non-traditional class schedules, the seminar was designed to meet half in person and half online during the semester. In-class meetings were from 9:30 to 4:00 on Saturdays. The intervals between meetings of the four classes were two weeks, six weeks, and three weeks. Initially the online component utilized Oncourse, Indiana University's course management system. The syllabus and class readings were placed in Oncourse for students to download. Readings intentionally were available in a number of formats, sometimes as PDF or HTML versions of articles, in other cases as links to audio or video files. Oncourse provides robust communications in the form of electronic mail, discussion forums, and chat rooms. The instructor seeded discussion forums on multiple readings to engage student interactions. Halfway through the semester the class was able to experiment with a beta test version of Macromedia Breeze collaborative presentation software in order to conduct meetings online.

Readings were designed to give students a grounding in professional values and to reinforce the idea that many of the challenges being confronted today were dealt with by earlier generations grappling with the past's new technologies. Televisions, photocopiers, and video recorders are all examples of technologies that forced librarians to examine the interplay of service, practice, and policy. More than fifty years ago, the Public Library Inquiry demonstrated our professional commitment to self-examination and documented the debates that took place over professional priorities. Students read classic works by Lester Asheim, Margaret Egan and Jesse Shera along with recent writings by Hal Varian, Peter Lyman, John Budd and others.

We read and discussed literature about information and the policies and conceptual frameworks surrounding it in order to move ourselves beyond the comfortable assumptions we brought to the course. We watched videos and listened to audio files about digital content and the globalization of information today and in the future. In an age when technologies change overnight and fads disappear just as quickly, I wanted students to adopt a broader and deeper way of analyzing information, one that was not bounded by time, class, culture or language. We examined problems such as protecting intellectual property rights while promoting public access to information and discussed potential solutions, including digital rights management software, the Open Access movement.

With this as background, what then happened in this experiment in information immersion? I will discuss the process first and then the outcomes. Library school programs in the United States are no different than most educational ventures in that students are used to playing a passive role subordinate to the active, directive professor. The first class followed a fairly traditional format of lecture, policy exercise, discussion, and team creation and initial meetings. The technology team was charged with creating "a website with content that supports our investigation: including a Wiki, blogs, RSS feeds, and podcasts, both audio and video." The policy

team was assigned responsibility for developing "the guidelines and rules that govern the use of the website and its content."

As anticipated, during that first meeting students spent time getting to know their teammates, an important first step of collaboration. In spite of my stating during the first class and in the syllabus: "Students will play an integral role in setting the direction of the class...," my seminar students appeared skeptical. Observations of the initial team meetings indicated that they used a fair amount of discussion time trying to intuit my expectations.

There were two weeks before the next in-class meeting. During that time online discussions about class readings allowed students to interact in a familiar style. Simultaneously, teams continued their discussions. Students seemed hesitant to make critical decisions affecting the direction of the course, making tentative suggestions, in some cases tentative because they lacked confidence, in others because they did not want to appear overbearing. They would confer about things online and await the final word from the instructor. In the end, one student brought the issue out into the open by sending me a private email asking if I was aware of the online discussion. I replied that I was but did not intend to intervene unless explicitly asked, and possibly not even then. When students accepted that they were expected to make decisions independently they began to rely on their teammates more.

The turning point in this behavior was when one student proposed creating audio podcasts on information policy that would be disseminated by INCOLSA, the Indiana statewide library network, to librarians around the state. An INCOLSA employee, he had discussed this with his colleagues and with management and he had their buy-in to approach the class with the proposal. As an instructor, I was excited about the initiative and the potential it might have for educating Indiana librarians. There was a rush of excitement and much positive feedback initially. Then students who had mixed feelings about the idea voiced their concerns about the amount of work that would be involved and about the duration of the project. After discussing the proposal more, students came to a consensus that they could define the scope of the work narrowly enough so that it would be manageable to complete by the end of the semester.

Discussion about the proposal intensified during the second class meeting. Students negotiated to change the two policy paper writing assignments into one broad policy paper with the second being a combination collaborative paper and podcast script that would focus on the issues addressed in the first paper. They thought that by writing their scripts in pairs with one person from each of the two teams, policy and technology, they could create richer podcasts than if they worked alone or with someone on the same team. Later, in an online posting, a student suggested writing a shorter reflection paper instead of the collaborative paper. I agreed to their requests, considering them reasonable.

At this point, I inserted myself into the process further and declared that we would create video podcasts rather than audio. I had four reasons for this: 1) It would

involve an emerging technology, a focus of the class; 2) We would have the option of stripping out the audio track and disseminating both video and audio files; 3) If I pursued this with future classes there was a greater likelihood of getting funding if we were perceived as more cutting edge; and 4) Academic politics within the state of Indiana dictated it. Purdue University had received much acclaim for its work in making audio podcasts of its classes available to students. Indiana University needed to create video podcasts to stay competitive.

As the students took control of the class, the technology team created a website to use instead of Oncourse. They selected and installed Joomla open source content management software in order to post their papers, abstracts, weblinks, and voting polls. After they realized that they had lost discussion capability, one of the team members found an open source solution to rectify the situation. In addition, an AJAX open source plug-in was used to create the "shout box" for instant messaging. The technology team tried but was unable to provide RSS feeds because of the policy team's decision to close the website to the public. The policy team was charged with developing guidelines that would govern use of the website and its content by class members and those outside of the class. The process of building a robust website was, as one policy team member termed it, "a slow evolution" because they had to figure out what technologies to use, what content to mount, and what policies to implement. The policies usually were determined by the two previous steps. In the end, the work helped students gain an understanding of the complex relationship among technology, content, and policy.

There were two guest speakers during the second class, one in person and the other via MSN Messenger. Steve Schmidt, a librarian at IUPUI, spoke about his experience working with a cable television station, creating broadcasts to educate people about libraries and their services. He talked about this from both management and technical perspectives, he answered questions from students, and then offered suggestions for the podcast project. In the afternoon, we did a video conference with Karen Coyle, digital library consultant formerly with the California Digital Library. She talked and answered questions for almost an hour about current developments with the Google library and publishing projects, the Section 108 Copyright Study Group, fair use, and orphan works. The decision to use a video conference for the second guest speaker was purposeful and was intended to continue the element of experimentation in the class. The choice of using MSN Messenger with a webcam was somewhat arbitrary; of the three systems tested it worked the best. In assessing the discussion with Coyle, students noted the heightened sense of interaction that accompanies a video conference where both sides can see one another rather just hearing disembodied voices. Coyle and I concurred.

The class ended with each team giving an informal presentation on their progress. The technology team introduced the various contenders for the website's content management system and the class voted on Joomla. The policy team talked of being overwhelmed by the plethora of information policy issues to address and asked the class for help in reaching consensus. After more discussion, everyone agreed to limit their research to five primary areas.

After the second class meeting, students began planning and refining the areas that would be of interest as podcasts. They used the class readings or their own interests as inspiration and came up with the topics of: copyright, privacy, digital rights management, RFID (radio frequency identifiers), large scale digitization projects such as Google Print or Open Content Alliance.

The six weeks between the second and third classes stretched out far too long. In the abstract stage of course preparation it had seemed manageable and a period that would push students to interact online. In reality, the tenuous relationships that students had begun to create were challenged by limited face-to-face communication. In project management the intermediate stage of defining the scope of a job is extremely demanding. Students were coping with this challenge at the same time as they were adapting to a new style of teaching, one that placed much more responsibility on their shoulders than is typical. With inadequate opportunity to bond, the class risked falling apart. One student was very vocal about her dissatisfaction with the lack of structure and direction. She had missed the second class where critical decisions were made with which she did not agree. As her dissatisfaction increased she lashed out at the instructor and other students, abruptly withdrawing from the class two weeks before the third class. She was a key member of the policy team and the team struggled to regroup and reassign work. The class as a whole was reeling from the departure and the manner in which it had occurred.

I tried to address the loss and discomfort indirectly, beginning the third class with a discussion of my teaching philosophy and revisiting the goals for the course. I also took the unconventional step of passing out a contract that guaranteed each student in the class the grade of A. This act was met with disbelief, amusement, and relief. As one student wrote in her reflection paper, "I feel removing this concern allowed group members to focus more on the work than the outcome. The greater focus created better work and most likely a better outcome."

The third face-to-face meeting was similar to the others in that there was a mix of lecture, discussion, and teamwork. In addition, I began videotaping students doing dry runs of their podcasts in an attempt to get them acclimated to the camera. I also taped a morning segment where students reflected on their class experiences as information creators, consumers, and disseminators. Given the subjective nature of case study research videotaping seemed an ideal way to keep an accurate record of the discussion. Also, by placing myself behind the camera, I thought students would be more likely to actively reflect on the class without responding to my reactions.

I asked the class to reflect on their experience as information consumers and they spoke of feelings of confusion and disorientation. Each student that commented mentioned that this was a "real world" experience; some appreciated that more than others. One described the lack of structure as "being thrown into the deep end of the pool" and said the class "splashed around for awhile just trying to find a framework" for approaching new technologies and policies they could examine. Another student appreciated the value of "stewing about" what they were going to do and how they were going to do it, instead of being closely directed by the

professor. The phrases "reality TV show" and "sociology experiment" were used to describe the class, both in a positive sense.

Class members nodded and murmured their agreement when a member of the technology team spoke of the recursive and bewildering nature of the work.

> "We were actually using the technologies that we were applying the policies for. So when we talked about things like intellectual property and do we want to post our papers, at the same time we were talking about copyright and coming up with a copyright statement for those papers. We would talk about how do people collaborate using instant messaging technology using instant messaging... which you can kind of get spun around to where you're not sure how focused you are, whether you're talking about the class or talking about broader information policies."

A policy team member anticipated more surprises around the corner as the class recognized new needs and she viewed that type of serendipity as a benefit. One of technologists commented on the advantage of using open source software where the class could rely on its active development community to cope with the unexpected. By participating in the class experiment students became conscious of the degree to which technological decisions made by programmers could dictate policy, however inadvertently. They grasped the steep learning curve demanded of policymakers when dealing with emerging technologies. One of the policy team was grateful for the team structure and remarked that although the teams conducted some of their work independently, over the course of the semester they increasingly functioned as a single unit. Class members bonded tightly and all agreed that they could consistently rely on someone else being available for help when needed.

The class found it overwhelming to try to absorb content from so many sources and in varying formats, some that were dependent upon a device. Students felt barraged by content, both content that was fairly stable and mature and that which was being developed during the course of the class. Their papers were less likely to cite refereed literature than more current writing available via the Internet. A student writing a paper on large scale digitization projects recounted his uncertainty because as he wrote he was watching webcasts from a University of Michigan symposium on precisely that topic. He was not sure how to cite a webcast or a quote from a blog or one of the class's instant messages, and often, in spite of being a sophisticated researcher, was uncertain of the credibility of content he was reading.

Policy team members recounted how daunting it was to try and construct a copyright policy because they knew how precise the wording must be and there was such a vast array of examples available on the Internet. Not knowing where to begin, they eventually settled on two local trusted sources: the INCOLSA employee and the IUPUI Copyright Management Center. They copied, with my permission, part of the class syllabus to create a mission statement they considered essential for the website.

At a time of tremendous flux in the worlds of publishing and librarianship, when the two groups can be very contentious about their approaches to intellectual property, this class of future librarians were struck by the choices they themselves made. When confronted with the decision regarding the level of protection they should apply to their own writing, whether to use traditional copyright or Creative Commons or ignore the issue and make everything on the class website freely accessible to the outside world, students opted to close the site. Well versed in the literature and aware of ongoing intellectual property lawsuits, the class was concerned about moving away from the protection offered by operating within the university framework. After much discussion, they agreed to take the cautious method of requiring users to have an authorized logon ID and password.

One student noted the irony of this decision. Librarians at a conference he attended the previous week bemoaned the fact that the new generation of library users, the so-called millenials, does not care about copyright. They were concerned about the consequences of this and were strategizing ways to manage the situation while remaining true to the mission of providing access to information. Simultaneously, idealistic library school students who criticized content producers and providers for "locking down" their content ultimately took the same action. A policy team member recalled how students had discussed the website policies and considered the possibility of adopting an open access approach, a concept of which they were very supportive. However, "when everyone personally had to think of their intellectual property up there and the ramifications, it made everybody step back and go, 'Wait a minute, maybe not.'" The significance of this insight is substantial and one that I am convinced never could have been achieved in a more traditional classroom setting.

Students took advantage of the experience to reflect on professional roles and how they are evolving. Students recognized that this class had put them in the position of creating, disseminating, and consuming information and they saw this as the direction in which library and information professionals were moving. Students opined that if librarians are to continue as disseminators of information then they must change because the manner in which that information is being disseminated is changing. As library users have become more technologically aware and proficient, "their demands have evolved so quickly that all the old models just simply don't work anymore and the reactions of not just librarians but publishers, you know, are sometime counterproductive."

One class member posited that technology was causing a role reversal for librarians, where the profession was moving away from a tradition of making everything freely accessible to a more guarded model. Another noted that the definitions of fair use and first sale had changed. One mentioned that the United States government is making less information available than in the past and not retaining all of its information, a situation that library professionals are aware even if their patrons are not. More than one student voiced the opinion that librarians needed to become more versed in information policy and assume a stronger advocacy role. They wanted the profession to be more proactive in the future rather than remain reactive.

As students discussed the role of librarians, one stated that:

> "The class experience has certainly punctuated in my mind that librarians are really in the mix of this. I mean you really can't trust publishers or commercial providers of information; they'll completely lock it down. You can't trust consumers because they'll steal it, I mean look at peer-to-peer networking and stuff like that. And you really can't trust legislators or policymakers because half the time they don't understand it and they're representing the interests of lobbyists who usually have a commercial interest so you're back to your publishers and your big media companies. So, who can steer the ship in the right direction? I think that librarians can, among other people."

Others agreed that librarians commonly are viewed as trusted professionals and that we need to maintain our sense of ethics and keep it foremost in our thoughts. In order to translate those ethics into practice, librarians and technologists need to work together to protect the interests of their patrons and to fight to retain library funding. A technologist stated the need to expedite the trickle-down effect in order to avoid a widening digital divide. The class saw this divide as more and more challenging at a time when media and formats proliferate. They thought that if libraries are to maintain any relevance within their communities they must promote their services and convince the public that they offer something beneficial. Students recognized that technology creates new possibilities but also isolates patrons who do not need to come to the library to take advantage of its resources and services. They commented that not all managers have made the change from keeping track of head counts to logging network access, important statistics in justifying budgets to decision makers.

Not surprisingly for library school students, the class concurred regarding the importance of librarians staying abreast of technological developments in order not to be left behind. Students perceived the value of the podcasts they were creating as being a part of this effort and recognized their contribution, however modest, in educating other professionals about important issues. They liked the idea of distilling critical information into a condensed amount of time so that busy people could educate themselves. One student made that point that "not all librarians have to know how to institute this technology, they just have to know how to use it. And there can be some people who institute it, some people who recommend it, some people who use it, some people who train. So I think that's important. We're not expecting everybody to start magically running their own content management systems and blogs and podcasting but if you can use it and show your patrons to use it. That's going to be a very important skill, as well."

Student reflection papers provided valuable information for evaluating the overall success of the class. Only one student assessed the class negatively. I have included a range of comments, including hers, to illustrate what some students took away from the class.

Comment #1:

"The panic and frustration in not knowing where the class was going turned out to work well for those of us who stuck with it. We all felt like we were going on a scary adventure and had to rely on each other to get to the other side... We all worked together to develop and contribute to what we wanted our site to become. I think the end collaboration on all of it turned out better than any of us had expected. If we think about ourselves as "disseminators" of information we are putting ourselves in the shoes of our patrons. It is important to remember the panic, intimidation, and frustration we felt ourselves when starting out the journey of this class in order to make us empathetic and effective listeners when assisting our patrons."

Comment #2:

"What we were able to do is come together as a roomful of professionals under a loose set of guidelines set forth in the syllabus. Our tangible results were a couple of podcasts and a website. But the value of the course took place in the intangible results. And these results will vary between class members depending on how much they were engaged. Luckily, for our class most members were heavily engaged, which led to a valuable learning experience. The value was not in the product, but in the process."

Comment #3:

"From this ex-educator's perspective, it was the guided freedom given (I don't want to say "lack of guidance" or "free-reign") that allowed us to see past what could have been a typical class project. From the beginning, we had lofty ideas and great expectations for our final project.... The team did meet with about three or more weeks of indecision and no forward movement. This shouldn't be attributed to lack of enthusiasm, but more so to not knowing what to do next. With no one leader to say, "Ok, do this now", we didn't do anything. This was the most beneficial experience of the whole semester for me. One person (who, I don't remember) made a suggestion to create a policy for copyright, I think, and things moved forward once again. As a teacher, one feels the need to keep action moving forward *all* the time— no breaks—the state is always screaming "time on task". However, I think it was this lull in the preparation that taught us the most. In the field, there will not be a professor or a teacher necessarily to say what should go on next."

Comment #4:

"If there is one thing I can say about my experience in this class is that it forced me to 'think outside the box.' The concept of library's various levels of 'stakeholders' was a new perspective for me as well. I've always thought of the library's users/patrons in a one-size-fits-all category, and the reality is that there are so many levels and each one has a different information need. Our

class laboratory, and our class discussions enabled me to empathize with the experiences of the library users."

Comment #5:

"This semester has been a maddening exercise in trying to develop answers to those questions through a class project that relies on innovative technology. Despite what others may think, I believe we have failed to produce a product that is innovative and cutting edge. We started the class with ten students. We are ending our class with nine students. Each one of us brought a different viewpoint to the goals of the class. One person, due to her own inability to be flexible, gave up on the project. Others have lost interest in creating something dynamic due to a lack of clear direction. In short, this class lacked one unifying force of motivation. As a result, we are ending up with a product that is less than what was hoped for. Some may call this the product of democracy, or perhaps complacency, and most definitely a compromise."

Comment #6:

"This has been the most exciting and rewarding class I've taken in graduate school, but it's not for the weak of heart. Students need to break themselves of the habit of being spoon-fed their education in lectures and labs and take ownership of and shape their learning. Technology and policy do not exist in a vacuum; they exist in a fluid space that requires a certain amount of intelligence, creativity and adaptability from all of the stakeholders in order for them to work successfully together."

Comment #7:

Throughout the semester various students stepped forward to lead on the policy team, tech team, in the class as a whole, and in the podcast groups. The leadership transitioned as needed based on expertise and time considerations. Lack of leadership was never an issue. The team members who were available to lead a particular task, discussion, etc. were readily accepted by the remainder of the class members. This demonstrates the trust among the group members. Trust was also extended when tasks were assigned. Each group member trusted that the other group members would effectively complete their tasks. Dr. Ball also trusted the members of the class to discuss, implement, and complete other necessary tasks as needed – often without her prodding. This trust is a major reason why the class was successful.

In doing my own assessment of the class, it was helpful to review students' reflection papers. My judgment was harsher than most of the students and considered it neither a success nor a failure. I found the course extremely challenging to teach, in large part because I thought it important to remain aloof and let students control the process. I had anticipated some frustration but not the

level they demonstrated and I came to believe that I had asked too much of them by not imposing more structure. The realm of information policy is vast and even the most successful seminar can only touch only a portion of possible topics. Although my students came away with a deeper, more visceral knowledge of the interweaving of policy and technology, they did not examine the literature in as much detail as I expected because of the focus on website mechanics.

In future classes I plan to utilize two student suggestions to improve the class: use case studies to structure the readings, and rotate leadership responsibilities among students. I began the semester under what turned out to be a false impression that each student in the class would be supplied with a new video iPod. They never materialized because of an administrative decision with the university's information technology division. The library school subsequently purchased iPods that future classes can use for listening to and viewing course materials.

In an age of tremendous technological development and change, it is incumbent upon library professionals to better understand the impact of emerging technologies on libraries and their users. Public libraries are challenged as they serve their communities in a world that increasingly views information as a commodity rather than as a public good. Public policy lags behind technological innovation and information professionals must advocate for the unreached and unserved. Knowledgeable librarians can represent the public interest in policy formation related to copyright and access to information. This class was an attempt to develop just such professionals.